The Short Term Effects of Fire Severity on Composition and Diversity of Soil Seed Bank in Zagros Forest Ecosystem, Servan County

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(Received: March 15-2014 ; Accepted: Nov. 26-2014)

Abstract

In most ecosystems, disturbance is an important agent of variation in community structure and composition. Determining the diversity and composition of soil seed bank is essential for designing conservation and restoration programs because it can markedly contribute to future plant communities. Despite the important role of soil seed banks in the composition of different plant communities, and thus in their conservation, the floristic studies in Zagros forests have only focused on aboveground vegetation. In this study, the characteristics of soil seed banks were examined in three conditions after one year of fire; high severity burned, low severity burned and control (not burned) in Shirvanchardavol city in northeast of Ilam Province. The result of DCA showed that different fire severities and their effects on site conditions have been reflected clearly in the composition of the soil seed bank. The results also indicated that soil seed bank composition between control and high severity burned spots was specifically different. The shanon diversity, Margalef richness and evenness indices differed significantly between three treatments and the highest diversity was observed at low severity. In this regard the proportion of annual forbs tended to decrease with increasing severity of fire. In soil seed bank, Therophytes were the dominant life form of low severity burned and control spots and Hemichryptophytes were dominant in high severity burned spots.

Keywords: Soil seed bank, DCA, Fire severity, Oak forest.

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[DOR: 20.1001.1.24763128.1393.3.9.5.7]

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